

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: SATYA SASTRI Examiner #: 79815 Date: 5-8-06  
Art Unit: 1713 Phone Number ~~30~~ 2-1112 Serial Number: 10/805,319  
Mail Box and Bldg/Room Location: 10A30 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*  
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

PLEASE SEE ATTACHED.

\*\*\*\*\*  
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## Type of Search

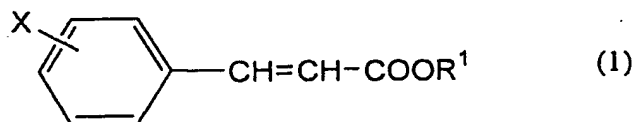
## Vendors and cost where applicable.

Searcher: <u>EL</u>	NA Sequence (#) _____	STN <u>\$ 215.70</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>✓ (3)</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____
Date Completed: <u>5-17-06</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>5</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>65</u>	Other _____	Other (specify) _____

## WHAT IS CLAIMED IS:

1. A resin composition comprising a  
 2-(1-arylalkylidene) acetic ester and at least one resin selected  
 from a methyl methacrylate resin, a styrene resin and a methyl  
 5 methacrylate-styrene copolymer resin, wherein the acetic ester  
 is contained in the composition in an amount of from about 0.0005  
 part by weight to about 0.1 part by weight with respect to 100  
 parts by weight of the resin.

2. A resin composition according to claim 1, wherein  
 10 the 2-(1-arylalkylidene) acetic ester is a compound represented  
 by formula (1).



wherein X represents a hydrogen atom, an alkyl group or an alkoxyl  
 group, and R<sup>1</sup> represents an alkyl group.

15 3. A molded article obtainable by molding a resin  
 composition according to claim 1 or 2.

4. A molded article according to claim 3, wherein the  
 article is a light guide.

## RESIN COMPOSITION AND MOLDED ARTICLE THEREOF

## Abstract of the Disclosure

A resin composition comprising a 2-(1-arylalkylidene)  
5 acetic ester and at least one resin selected from a methyl  
methacrylate resin, a styrene resin and a methyl  
methacrylate-styrene copolymer resin is provided, wherein the  
acetic ester is contained in the composition in an amount of  
from about 0.0005 part by weight to about 0.1 part by weight  
10 with respect to 100 parts by weight of the resin. The resin  
composition is improved in durability without deteriorating the  
excellent properties of the resin, such as being colorless and  
transparent.

**Anekwe, Imelda (ASRC)**

189272

**From:** SATYA SASTRI [satya.sastri@uspto.gov]  
**Sent:** Monday, May 08, 2006 2:55 PM  
**To:** STIC-EIC1700  
**Subject:** Database Search Request, Serial Number: 10/805,319

**Requester:**  
SATYA SASTRI (P/1713)  
**Art Unit:**  
GROUP ART UNIT 1713  
**Employee Number:**  
79815  
**Office Location:**  
REM 10A30  
**Phone Number:**  
(571)272-1112  
**Mailbox Number:**

**SCIENTIFIC REFERENCE BR**  
Sci & Tech Inf. Cntr

**MAY 8 RECD**

**Pat. & T.M. Office**

**Case serial number:**  
10/805,319  
**Class / Subclass(es):**

**Earliest Priority Filing Date:**  
3/26/03

**Format preferred for results:**  
Paper

**Search Topic Information:**  
A resin composition comprising (A) a methyl methacrylate or styrene polymer or copolymer and (B) a compound 2-(1-arylalkylidene)acetic ester (claim 1). The structure of (B) is given in claim 2.

**Special Instructions and Other Comments:**

=> file reg

FILE 'REGISTRY' ENTERED AT 11:03:47 ON 17 MAY 2006  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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=> d his

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L4 FILE 'LREGISTRY' ENTERED AT 10:57:10 ON 17 MAY 2006  
STR

L5 FILE 'REGISTRY' ENTERED AT 10:59:45 ON 17 MAY 2006  
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L6 STR L4  
L7 1 S L1 AND L6 AND L2  
L8 12 S L1 AND L6 AND L2 FUL  
SAV L8 SAS319/A

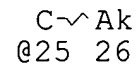
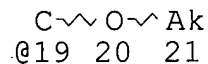
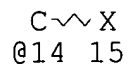
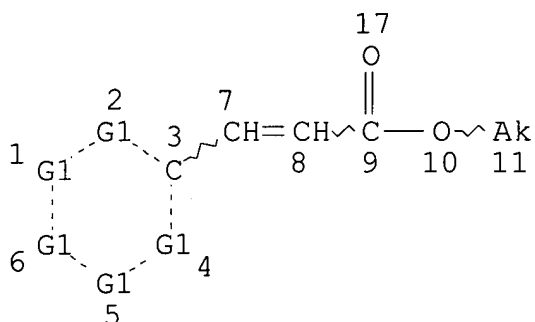
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8 S L8

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L1 STR



VAR G1=CH/14/19/25

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CONNECT IS E1 RC AT 21

CONNECT IS E1 RC AT 26

DEFAULT MLEVEL IS ATOM

GGCAT IS SAT AT 11

GGCAT IS SAT AT 21

GGCAT IS SAT AT 26

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

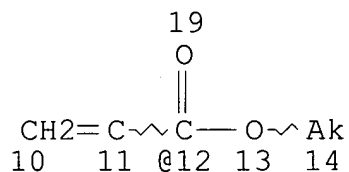
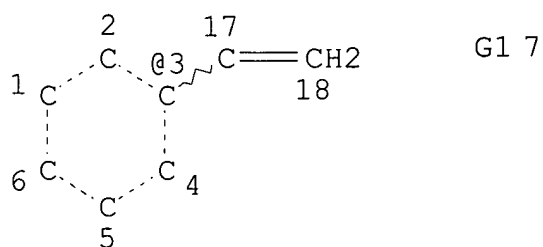
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NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE

L2 SCR 2043

L6 STR



VAR G1=3/12

NODE ATTRIBUTES:

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DEFAULT MLEVEL IS ATOM

GGCAT IS SAT AT 14

DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE  
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100.0% PROCESSED 5919 ITERATIONS  
SEARCH TIME: 00.00.01

12 ANSWERS

=> file zcaplus  
FILE 'ZCAPLUS' ENTERED AT 11:03:56 ON 17 MAY 2006  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

=> d l10 1-8 ibib abs hitstr hitrn

L10 ANSWER 1 OF 8 ZCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2001:809038 ZCAPLUS  
DOCUMENT NUMBER: 135:350560  
TITLE: T-butyl cinnamate polymers and their use in  
photoresist compositions  
INVENTOR(S): Malik, Sanjay; Ferreira, Lawrence; Eisele,  
Jeffrey; Allyn, Whewell  
PATENT ASSIGNEE(S): Arch Specialty Chemicals, Inc., USA  
SOURCE: U.S., 9 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 6312870	B1	20011106	US 2000-619180	200007 19
WO 2002006895	A1	20020124	WO 2001-US41011	200106 15

W: JP, KR, SG

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,

NL, PT, SE, TR  
EP 1303789 A1 20030423 EP 2001-951075 200106  
15  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, FI, CY, TR  
JP 2004504632 T2 20040212 JP 2002-512742 200106  
15  
TW 548517 B 20030821 TW 2001-90115571 200106  
27  
PRIORITY APPLN. INFO.: US 2000-619180 A 200007  
19  
WO 2001-US41011 W 200106  
15

AB A resist compn. contg. a polymer of t-Bu cinnamate, a photoacid generator, and a solvent. Optionally, the resist compn. may include a basic compd. The polymer of t-Bu cinnamate has the monomeric units: (R1MeEtC-p-C6H4OH)a, (PhMeCHMeCHC(:O)OC(CH3)3)b and (R2MeEtCC(:O)OR3)c (a=0.3-0.9, b=0.1-0.7, c=0-0.3; R1=H, Me, CH2OR4; R4=H, C1-4 alkyl group; R2=H, Me, CH2OR4, CH2CN, CH2X; X=Cl, I, Br, F, CH2COOR5; R5=C1-4 alkyl group; and R3= isobornyl, cyclohexyl Me, cyclohexyl Et, benzyl, phenethyl). The present invention provides photoresist compn. which produce high resoln. resist patterns with improved etch resistance.

IT **371755-29-2DP**, p-Acetoxystyrene-tert-butyl cinnamate copolymer, hydrolized **371755-30-5DP**, p-Acetoxystyrene-tert-butyl cinnamate-phenethyl acrylate copolymer, hydrolized **371755-31-6DP**, p-Acetoxystyrene-tert-butyl cinnamate-p-tert-butylstyrene copolymer, hydrolized **371755-32-7DP**, p-Acetoxystyrene-tert-butyl cinnamate-styrene copolymer, hydrolized **371755-33-8DP**, p-Acetoxystyrene-tert-butyl cinnamate-isobornyl acrylate copolymer, hydrolized (photoresist compn. contg.)

RN 371755-29-2 ZCAPLUS

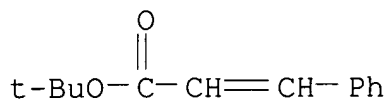
CN 2-Propenoic acid, 3-phenyl-, 1,1-dimethylethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

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CRN 14990-09-1

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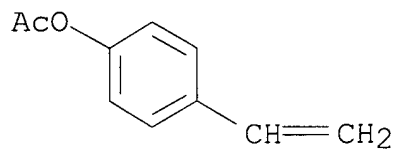




CM 2

CRN 2628-16-2

CMF C10 H10 O2



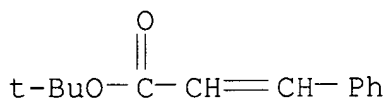
-RN 371755-30-5 ZCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 1,1-dimethylethyl ester, polymer with  
4-ethenylphenyl acetate and 2-phenylethyl 2-propenoate (9CI) (CA  
INDEX NAME)

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CRN 14990-09-1

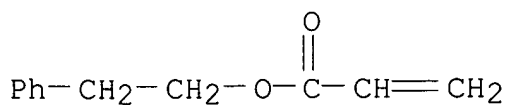
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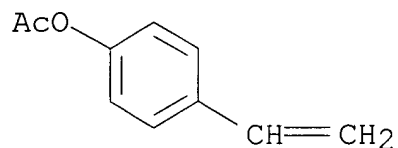
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CRN 3530-36-7

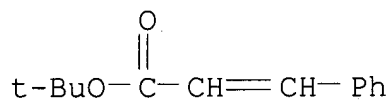
CMF C11 H12 O2



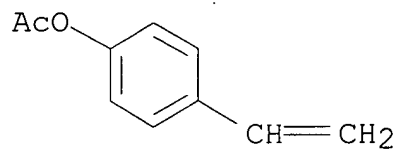
CM 3

CRN 2628-16-2  
CMF C10 H10 O2RN 371755-31-6 ZCAPLUS  
CN 2-Propenoic acid, 3-phenyl-, 1,1-dimethylethyl ester, polymer with  
1-(1,1-dimethylethyl)-4-ethenylbenzene and 4-ethenylphenyl acetate  
(9CI) (CA INDEX NAME)

CM 1

CRN 14990-09-1  
CMF C13 H16 O2

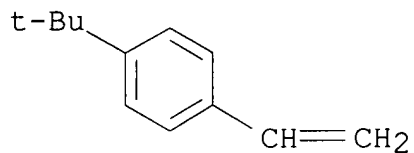
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CRN 2628-16-2  
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CM 3

CRN 1746-23-2

CMF C12 H16



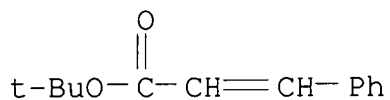
RN 371755-32-7 ZCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 14990-09-1

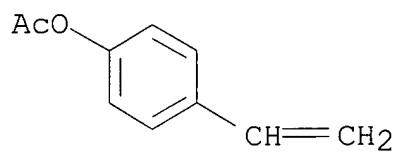
CMF C13 H16 O2



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CRN 2628-16-2

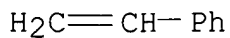
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CM 3

CRN 100-42-5

CMF C8 H8



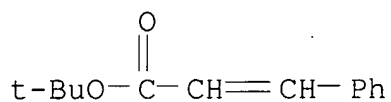
RN 371755-33-8 ZCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 1,1-dimethylethyl ester, polymer with  
4-ethenylphenyl acetate and rel-(1R,2R,4R)-1,7,7-  
trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 14990-09-1

CMF C13 H16 O2

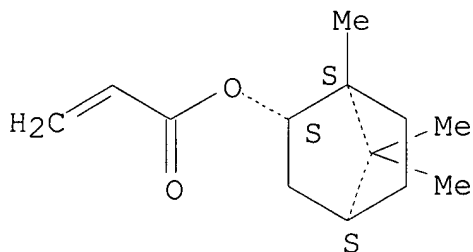


CM 2

CRN 5888-33-5

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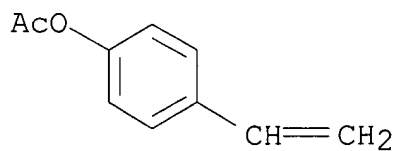
Relative stereochemistry.



CM 3

CRN 2628-16-2

CMF C10 H10 O2



IT **371755-29-2DP**, p-Acetoxystyrene-tert-butyl cinnamate copolymer, hydrolized **371755-30-5DP**, p-Acetoxystyrene-tert-butyl cinnamate-phenethyl acrylate copolymer, hydrolized **371755-31-6DP**, p-Acetoxystyrene-tert-butyl cinnamate-p-tert-butylstyrene copolymer, hydrolized **371755-32-7DP**, p-Acetoxystyrene-tert-butyl cinnamate-styrene copolymer, hydrolized **371755-33-8DP**, p-Acetoxystyrene-tert-butyl cinnamate-isobornyl acrylate copolymer, hydrolized (photoresist compn. contg.)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 2 OF 8 ZCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1985:455031 ZCAPLUS  
DOCUMENT NUMBER: 103:55031  
TITLE: Optical properties of light-focussing plastic rods prepared by photopolymerization and effect of plasticizer  
AUTHOR(S): Enmanji, Koe; Takahashi, Kenzo  
CORPORATE SOURCE: Mater. Eng. Lab., Mitsubishi Electr. Corp., Amagasaki, 661, Japan  
SOURCE: Nippon Kagaku Kaishi (1985), (5), 996-9  
CODEN: NKAJB8; ISSN: 0369-4577  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese

AB Photopolymn. of Me methacrylate and Me cinnamate was carried out using benzoin Et ether (I) [574-09-4] to yield light-focussing plastic rods with parabolic gradient of refractive index in the region near center axis. The gradient const. (A), which was measured by a light tracing method, increased with increase of I concn. To improve the mech. strength, plasticizer was added, but most of the general plasticizers caused redn. of A value. However, .alpha.-tocopherol acetate [51910-58-8], a plasticizer which has a photoinitiating property, did not. The mech. strength of the plastic rods obsd. by the tensile properties showed max. of 2.0 kg/mm<sup>2</sup> at 7% addn. of a such a plasticizer.

IT **68529-20-4P**  
(photochem. prepn. of, to prep. light-focusing plastic rods)

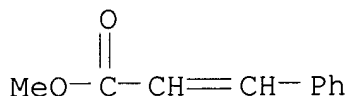
RN 68529-20-4 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with methyl 3-phenyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 103-26-4

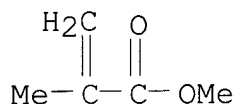
CMF C10 H10 O2



CM 2

CRN 80-62-6

CMF C5 H8 O2

IT **68529-20-4P**

(photochem. prepn. of, to prep. light-focusing plastic rods)

L10 ANSWER 3 OF 8 ZCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1983:216058 ZCAPLUS

DOCUMENT NUMBER: 98:216058

TITLE: Radical polymerization behavior of trans-methyl cinnamate

AUTHOR(S): Salamone, J. C.; Akharoh, E.; Mahmud, M. U.; Nagabhushanam, T.; Watterson, A. C.

CORPORATE SOURCE: Dep. Chem., Univ. Lowell, Lowell, MA, 01854, USA

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1981), 22(2), 369-70

CODEN: ACPPAY; ISSN: 0032-3934

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Based on a study of the polymer [86002-35-9] and copolymer [86002-36-0] prepd. by radical polymn. and charge-transfer polymn. of trans-Me cinnamate (I) and I with styrene, resp., stereoregular polymers can be produced from the copolymn. of mono- and 1,2-disubstituted olefins.

IT **86002-36-0P**

(prepn. of, by charge-transfer and radical polymn., stereoregularity in relation to)

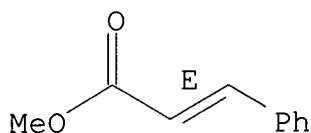
RN 86002-36-0 ZCAPLUS

CN 2-Propenoic acid, 3-phenyl-, methyl ester, (E)-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

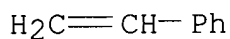
CM 1

CRN 1754-62-7  
CMF C10 H10 O2

Double bond geometry as shown.



CM 2

CRN 100-42-5  
CMF C8 H8IT **86002-36-0P**(prepn. of, by charge-transfer and radical polymn.,  
stereoregularity in relation to)

L10 ANSWER 4 OF 8 ZCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1979:7068 ZCAPLUS  
DOCUMENT NUMBER: 90:7068  
TITLE: Cinnamate ester copolymers for fiber optics  
INVENTOR(S): Enmanji, Koe; Takahashi, Kenzo; Kusakawa,  
Hideaki  
PATENT ASSIGNEE(S): Mitsubishi Electric Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 53101088	A2	19780904	JP 1977-16410	19770216

PRIORITY APPLN. INFO.:

JP 1977-16410 A

197702  
16

AB Cinnamate esters and 1-4 times their wt. of other monomers having refractive index and reactivity different from those of the cinnamate esters are polycond. in the presence of photopolymer. initiators to give copolymers for fiber optics. Thus, a mixt. of Me cinnamate 10, Me methacrylate 40, and benzoin Me ether 4 parts was sealed in a 3.0-mm-diam. (inside) glass tube, irradiated 10 h with a 500-W Xe lamp, and heated 10 h in an oven at 80.degree. to give a copolymer [68529-20-4] rod having refractive index gradually increasing from 1.492 at the periphery to 1.53 at the center.

IT **68529-17-9P 68529-20-4P**

(manuf. of, by photopolymer., for fiber optics)

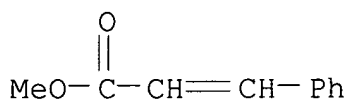
RN 68529-17-9 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with methyl 3-phenyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 103-26-4

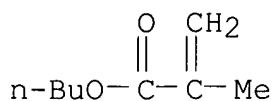
CMF C10 H10 O2



CM 2

CRN 97-88-1

CMF C8 H14 O2



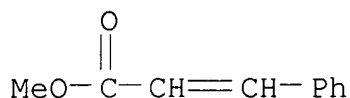
RN 68529-20-4 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with methyl 3-phenyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

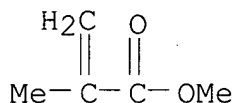


CRN 103-26-4  
CMF C10 H10 O2



CM 2

CRN 80-62-6  
CMF C5 H8 O2



IT **68529-17-9P 68529-20-4P**  
(manuf. of, by photopolymn., for fiber optics)

L10 ANSWER 5 OF 8 ZCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1974:83703 ZCAPLUS

DOCUMENT NUMBER: 80:83703

TITLE: Temperature dependence of monomer reactivity ratios in copolymerization of styrene with methyl and ethyl cinnamates

AUTHOR(S): Barson, C. A.; Turner, M. J.

CORPORATE SOURCE: Dep. Chem., Univ. Birm., Birmingham, UK

SOURCE: European Polymer Journal (1973), 9(8), 789-93  
CODEN: EUPJAG; ISSN: 0014-3057

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Carboxyl <sup>14</sup>C-labeled Et cinnamate [103-36-6] and Me cinnamate [103-26-4] were copolymd. with styrene at 40-130.deg. using azoisobutyronitrile initiator and the compns. of the products, Et cinnamate-styrene copolymer [**30229-76-6**] and Me cinnamate-styrene copolymer [**30104-80-4**], were detd. by liq. scinillation counting. Monomer reactivity ratios were detd. graphically from a simplified form of the copolymer compn. equation. Arrhenius parameters were calcd.; the energies of activation and frequency fractors favored cross-propagation and self-propagation, resp. The latter effect predominated slightly but no steric effects were obsd.

L10 ANSWER 6 OF 8 ZCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1972:515862 ZCAPLUS  
DOCUMENT NUMBER: 77:115862  
TITLE: Polyester fibers based on ethylene terephthalate  
INVENTOR(S): Tsuji, Takaaki  
PATENT ASSIGNEE(S): Kuraray Co., Ltd.  
SOURCE: Jpn. Tokkyo Koho, 4 pp.  
CODEN: JAXXAD  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 46043263	B4	19711221	JP 1968-91860	196812 13

AB Fibers from a blend of poly(ethylene terephthalate) (I) or poly(ethylene terephthalate isophthalate) [24938-04-3] and poly(Me methacrylate) (II) [9011-14-7], styrene-dimethyl fumarate copolymer [29058-33-1], .alpha.-methylstyrene-ethyl acrylate copolymer [27615-09-4], styrene-methyl cinnamate copolymer [**30104-80-4**], or p-chlorostyrene-methyl methacrylate copolymer [26746-77-0] were hydrolyzed in the presence of an alkali to give a product having better dyeability (cationic and disperse dyes), pilling resistance, and antistatic properties than unmodified polyester fibers and polystyrene-modified polyester fibers. For example, a fiber prepd. from a 70:30 I-II blend was impregnated with dioxane and hydrolyzed with a 40 g/l. aq. KOH at 100.deg. for 30 min.

IT **30104-80-4**  
(antistatic polyester fiber compn. contg.)

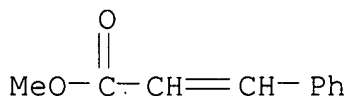
RN 30104-80-4 ZCAPLUS

CN 2-Propenoic acid, 3-phenyl-, methyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 103-26-4

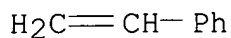
CMF C10 H10 O2



CM 2

CRN 100-42-5

CMF C8 H8



IT 30104-80-4

(antistatic polyester fiber compn. contg.)

L10 ANSWER 7 OF 8 ZCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1968:114995 ZCAPLUS

DOCUMENT NUMBER: 68:114995

TITLE: Radical copolymerization of alkyl cinnamates and alkyl atropates

AUTHOR(S): Otsu, Takayuki; Yamada, Bunichiro; Nozaki, Toru

CORPORATE SOURCE: Osaka City Univ., Osaka, Japan

SOURCE: Kogyo Kagaku Zasshi (1967), 70(11), 1941-4

CODEN: KGKZA7; ISSN: 0368-5462

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Me, Et, .beta.-chloroethyl, tert-Bu, Bu, Ph, and benzyl cinnamates (PhCH:CHCO<sub>2</sub>R) were synthesized from the corresponding alcs. and cinnamic acid or cinnamoyl chloride and their properties are given in Table I. Et atropate was prepd. by the reaction of formalin with the condensate of Et phenylacetate and Et oxalate, and .beta.-chloroethyl, Pr, and Bu atropates were obtained by the esterification of the corresponding alcs. with atropic acid prepd. by alk. hydrolysis of Et atropate. [TABLE OMITTED] The properties of the atropates (CH<sub>2</sub>:CPhCO<sub>2</sub>R) are given in Table II. The binary copolymn. of styrene and these esters was carried out at 60.degree. with azobisisobutyronitrile as the initiator. [TABLE OMITTED] The molar mixing ratios of the monomers were 0.1-0.9:1. The compn. of the copolymers was detd. from their C contents and the monomer reactivity ratios, r<sub>1</sub> and r<sub>2</sub> (M<sub>1</sub> = styrene) were calcd. The Alfrey-Price Q and e values for the esters were calcd. from r<sub>1</sub> and r<sub>2</sub> by taking the values for styrene as Q<sub>1</sub> = 1.0 and e<sub>1</sub> = -0.8. These values are shown in Tables I and II. The plot of .sigma.\* vs. log(1/r<sub>1</sub>) gave a straight line in the cases of the copolymns. of styrene and the cinnamate esters. The radical reactivities of the cinnamate esters depend on the polarizability of the esters and are not influenced by the steric effects of the alkyl (or aryl) groups. Styrene and the atropate esters formed nearly 1:1 molar copolymers from a wide range of monomer ratios. This indicates the strong tendency for the alternating growing of the copolymer chains in the

combinations of styrene and the atropate esters. The larger Q2 values for the atropate esters than for the cinnamate esters are due to the steric effects of the .beta.-substituted groups.

IT **30104-80-4P 30229-74-4P 30229-75-5P**

**30229-76-6P**

(prepn. of, reactivity ratios in)

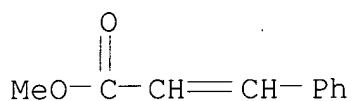
RN 30104-80-4 ZCAPLUS

CN 2-Propenoic acid, 3-phenyl-, methyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 103-26-4

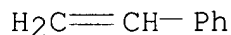
CMF C10 H10 O2



CM 2

CRN 100-42-5

CMF C8 H8



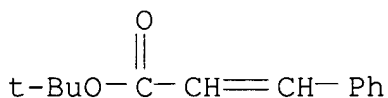
RN 30229-74-4 ZCAPLUS

CN Cinnamic acid, tert-butyl ester, polymer with styrene (8CI) (CA INDEX NAME)

CM 1

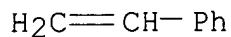
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CMF C13 H16 O2



CM 2

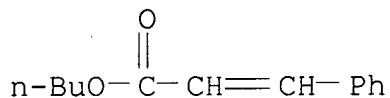
CRN 100-42-5  
CMF C8 H8



RN 30229-75-5 ZCAPLUS  
CN Cinnamic acid, butyl ester, polymer with styrene (8CI) (CA INDEX NAME)

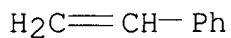
CM 1

CRN 538-65-8  
CMF C13 H16 O2



CM 2

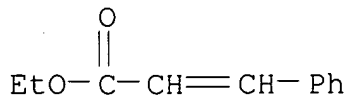
CRN 100-42-5  
CMF C8 H8



RN 30229-76-6 ZCAPLUS  
CN 2-Propenoic acid, 3-phenyl-, ethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

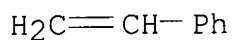
CRN 103-36-6  
CMF C11 H12 O2



CM 2

CRN 100-42-5

CMF C8 H8



IT 30104-80-4P, preparation 30229-74-4P, preparation  
30229-75-5P, preparation 30229-76-6P, preparation  
(reactivity ratios in)

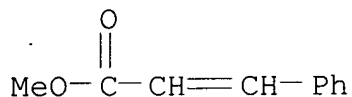
RN 30104-80-4 ZCAPLUS

CN 2-Propenoic acid, 3-phenyl-, methyl ester, polymer with  
ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 103-26-4

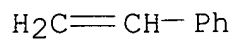
CMF C10 H10 O2



CM 2

CRN 100-42-5

CMF C8 H8



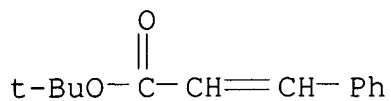
RN 30229-74-4 ZCAPLUS

CN Cinnamic acid, tert-butyl ester, polymer with styrene (8CI) (CA  
INDEX NAME)

CM 1

CRN 14990-09-1

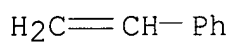
CMF C13 H16 O2



CM 2

CRN 100-42-5

CMF C8 H8



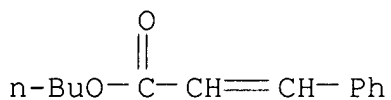
RN 30229-75-5 ZCAPLUS

CN Cinnamic acid, butyl ester, polymer with styrene (8CI) (CA INDEX NAME)

CM 1

CRN 538-65-8

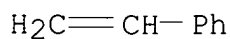
CMF C13 H16 O2



CM 2

CRN 100-42-5

CMF C8 H8



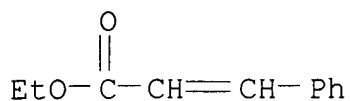
RN 30229-76-6 ZCAPLUS

CN 2-Propenoic acid, 3-phenyl-, ethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 103-36-6

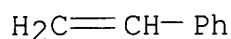
CMF C11 H12 O2



CM 2

CRN 100-42-5

CMF C8 H8



IT **30104-80-4P 30229-74-4P 30229-75-5P**  
**30229-76-6P**

(prepn. of, reactivity ratios in)

IT **30104-80-4P**, preparation **30229-74-4P**, preparation  
**30229-75-5P**, preparation **30229-76-6P**, preparation  
 (reactivity ratios in)

L10 ANSWER 8 OF 8 ZCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1968:69572 ZCAPLUS

DOCUMENT NUMBER: 68:69572

TITLE: Copolymers of substituted conjugated vinyl  
 compounds and olefin compounds

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd.

SOURCE: Fr., 10 pp.

CODEN: FRXXAK

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
FR 1489950	A1	19670728	FR 1966-71473	196607 29
DE 1795866	B1	19790809	DE 1967-1795866	196607 22
DE 1795866	C2	19800410		
DE 1645378	B2	19791206	DE 1966-S105114	



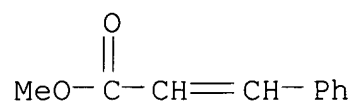
			196607 29
PRIORITY APPLN. INFO.:	JP 1965-46495	A	196507 30
	JP 1965-44060	A	196507 22
	JP 1966-35764	A	196606 02

AB The title compns. are prepd. by treating an olefinic compd. with a conjugated vinyl compd. in the presence of an organometallic catalyst and O or org. peroxide at -150.degree. to +100.degree.. Thus, to 3.2 g. Me methacrylate (I) in 60 ml. PhMe, 8 millimoles Et3Al2Cl3 (II) (in the form of a soln. of 0.2 g./ml. in PhMe) were added at -78.degree. under N. The reaction mixt. was stirred vigorously, the temp. raised to 25.degree., and then 5 g. styrene added. After 5 hrs., the reaction was stopped by the addn. of MeOH, and the insol. copolymer was sepd., washed with MeOH, and dried in vacuo at 50.degree. to give 1.54 g. of a 1:1 copolymer with an intrinsic viscosity 2.02 dl./g. (C6H6, 30.degree.) and a softening point 231-3.degree. which could be pressed to transparent films with a d23 1.119. I was copolymd. with vinyl chloride in the presence of II and Bz2O2 in PhMe to give the copolymer. The following copolymers are prepd. similarly (olefinic compd., conjugated vinyl compd., catalyst, solvent, and intrinsic viscosity dl./g. given): C2H4, I, II, heptane, -; propylene, I, AlEtCl2, heptane, 0.62; propylene, I, SnCl4Et3Al, PhMe, -; allylbenzene, I, BCl3-Et2Zn, cyclohexane, -; styrene, Bu methacrylate, II, PhMe, 2.95; styrene, Me .alpha.-chloroacrylate, II, PhMe, -; styrene, .alpha.-chloroacrylonitrile, II, PhMe, 0.20; styrene, methacrylonitrile, II, PhMe, 0.54; styrene, methacrylamide, II, PhMe, -; propylene, Me crotonate, EtAlCl2, heptane, 0.25; styrene, Me cinnamate, II, PhMe, 0.66.

IT **30104-80-4P**, preparation  
(catalysts for, trichlorotriethyldialuminum as)  
RN 30104-80-4 ZCAPLUS  
CN 2-Propenoic acid, 3-phenyl-, methyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

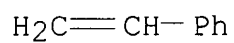
CRN 103-26-4  
CMF C10 H10 O2



CM 2

CRN 100-42-5

CMF C8 H8



- (manuf. of, catalysts for, trichlorotriethyldialuminum as  
IT **30104-80-4P**, preparation  
(catalysts for, trichlorotriethyldialuminum as)  
IT **30104-80-4P**, preparation  
(manuf. of, catalysts for, trichlorotriethyldialuminum as)